HAIR CLIP

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a hair clip for retaining hair between a pair of hair retainers pivoted by hinge portions, and more particularly, to a hair clip for temporarily retaining hair at the time of setting hair, applying makeup or the like.

2. Description of Related Art

Figs. 5 and 6 illustrate a conventional hair clip B. The hair clip B includes a pair of hair retainers 51 and 52 pivoted at the first end portion thereof 51b and 52b and urged by a coil spring 56 so as to close the second end portions 51a and 52a of the hair retainers 51 and 52.

Each hair retainer 51 and 52 is provided with a pair of opposing hinge ledges 53, 53, 54 and 54 at the first end portion 51b and 52b. The pair of hinge ledges 53 and 53 of one of the hair retainers 51 are disposed outside the pair of hinge ledges 54 and 54 of the other of hair retainers 52. These hinge ledges 53, 53, 54 and 54 are pivoted by a pivotal shaft 55 (i.e., a rivet) on which the coil spring 56 is wounded. Thus, the pair of hair retainers 51 and 52 are allowed to rotate, i.e., open and close, about the pivotal

shaft 55 with the other end 51a and 52a of the hair retainers 51 and 52 urged in a closing direction.

Therefore, in a state in which the hair clip B is not in use, the hair retainers 51 and 52 are closed due to the spring force of the coil spring 56. By gripping the lever portions 51b and 52b, the hair retainers 51 and 52 are opened so that hair can be retained between the hair retainers 51 and 52.

In the meantime, the corresponding hinge ledges 53 and 54 of the hair retainers 51 and 52 are disposed so as to contact with each other. However, a gap of about 0.01 mm is usually formed between the adjacent hinge ledges 53 and 54 so that the hair retainers 51 and 52 can be freely opened and closed. As a result, there is the fear of unintentionally introducing hair into the gap, i.e., between the adjacent hinge ledges 53 and 54. Also, another gap of about 0.01 mm is formed between the head portion 55a and 55b of the pivotal shaft 55 and the hinge ledge 53 and 53 located outside. Accordingly, hair may also be introduced unintentionally into the gap, i.e., between the head portion 55a and 55b and the hinge ledges 53 and 53. In cases where the user's hair is introduced into these gaps and caught therein, a few hairs may be pulled out of the user's head. This not only gives the pain to the user but also makes the user uncomfortable because of losing hair.

In view of the above, the present inventor proposed a hair clip provided with hinge ledge covers each formed on the side edge of each hinge ledge and covering the corresponding

inside hinge ledge (see Japanese Unexamined Laid-open Patent Publication No. P2000-333721A).

However, even in the hair clip, there is a fear that hair is introduced into the gap between the adjacent hinge ledges and/or the space between the inner side hinge ledges and caught therein.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a hair clip capable of assuredly preventing a hair-caught at the hinge side of the hair clip.

A hair clip comprises first and second hair retainers for retaining hair therebetween, each of the hair retainers having a first end portion and a second end portion, a pivotal shaft for pivoting the hair retainers at the first end portions and a spring for urging the second end portions of the hair retainers in a closing direction thereof. The first hair retainer is provided with a pair of opposing outside hinge ledges at the first end portion and the second hair retainer is provided with a pair of opposing inside hinge ledges at the first end portion. The pair of outside hinge ledges of the first hair retainer are disposed outside of the pair of inside hinge ledges of the second retainer. The pivotal shaft is inserted into shaft-receiving apertures formed in the inside and outside hinge ledges so that the pair of hair retainers are pivoted about the pivotal shaft. The hair clip is

characterized in that: the first hair retainer is provided with a hinge ledge cover connecting inner edge portions of the outside hinge ledges of the first hair retainer located at the second end portion side thereof and covering inner side edge portions of the inside hinge ledges of the second hair retainer, the inner side edge portions being portions located at the second end portion side of the second hair retainer, each of the inside hinge ledges is provided with a hinge ledge cover introducing slot corresponding to the hinge ledge cover at each basal end portion thereof, so that the pair of hair retainers takes a closed position with the hinge ledge cover fitted in the hinge ledge cover introducing slots, whereby the hinge ledge cover covers the inner side edge portions of the inside hinge ledges and an space between the inside hinge ledges irrespective of an opening angle of the hair retainers.

With this hair clip according to the present invention, since the first hair retainer is provided with a hinge ledge cover connecting inner side edge portions of the outside hinge ledges of the first hair retainer located at the second end portion side thereof and covering inner side edge portions of the inside hinge ledges of the second hair retainer, the gap between the adjacent inside and outside hinge ledges and the space between the inside hinge ledges are covered by the hinge ledge cover. Accordingly, hair is prevented from being introduced into the gap or the space, and therefore it is prevented that hair is caught by the hair clip and pulled out

of a user's head when detaching the hair clip from the user's head. Thus, the hair clip does not make the user uncomfortable. Furthermore, since the hinge ledge cover is provided along the inner side edge portions of the outside hinge ledges, the outside hinge ledges are strengthened, resulting in enhanced durability.

It is preferable that the hinge ledge cover introducing slot extends to a region below the pivotal shaft, whereby a tip end of the hinge ledge cover is positioned below the pivotal shaft in the hinge ledge cover introducing slot when the pair of hear retainers are in a closed position. In this case, the hair retainers can be closed assuredly, and the hinge ledge cover can assuredly cover the inside hinge ledges even in a state in which the hair retainers are in an opened state.

It is preferable that the hinge ledge cover and the outside hinge ledges of the first hair retainer cover the inside hinge ledges of the second hair retainer irrespective of the opening angle of the hair retainers. In this case, since the inside hinge ledges are almost covered by the hinge ledge cover from the closed state to the opened state of the hair retainers, it is prevented that hair is caught by the hair clip at the time of opening and/or closing hair retainers.

It is preferable that the hinge ledge cover integrally extends from an inner surface of the first hair retainer. In

this case, it is more assuredly prevented that hair is caught by the hair clip.

It is preferable that each of the outside hinge ledges of the first hair retainer is provided with an outwardly protruded cylindrical portion formed on an outer surface thereof and surrounding the shaft-receiving aperture thereof and that each of enlarged head portions of the pivotal shaft is disposed in the cylindrical portion. In this case, each of the enlarged head portions of the pivotal shaft is disposed in the cylindrical portion and therefore the gap between the enlarged head portion and the outside hinge ledge can be covered by the cylindrical portion. Accordingly, it is prevented that hair is caught by the gap and pulled out of a user's head when detaching the hair clip from the user's head. Thus, the hair clip does not make the user uncomfortable. Furthermore, since the cylindrical portion is formed on the outside hinge portion, the outside hinge portion can be strengthened, resulting in enhanced durability.

The cylindrical portion may have an inclined or sloped outer surface, and is not limited to a specific configuration so long as it is possible to cover the enlarged head portion of the pivotal shaft.

It is preferable that the first hair retainer is an integral synthetic resin molded article. In this case, the first hair retainer can be easily colored or shaped as compared with a metallic hair retainer. Furthermore, in cases

where the second hair retainer is made of metal, the first hair retainer can hide the metallic inside hinge ledges of the second hair retainer, thereby improving the appearance of the hair retainer. However, the first hair retainer can be made of metal such as aluminum, stainless or the like.

It is preferable that the spring is a coil spring wounded around the pivotal shaft. In this case, the hair retainers can be assuredly urged in its closing position with simple structure.

It is preferable that the second hair retainer is a metal plate press molded article. In this case, the second hair retainer can be formed easily. However, this second hair retainer can also be made of synthetic resin.

The hair clip according to the present invention can be preferably applied to a hair clip having elongated first and second hair retainers and lever portions at the first and second end portions.

BRIEF EXPLANATION OF THE DRAWINGS

Other objects and advantages of the present invention will become apparent from the detailed description of the preferred embodiments with reference to the attached drawings, wherein:

Fig. 1 shows a perspective view of a hair clip of an embodiment according to the present invention;

Fig. 2A shows an enlarged cross-sectional view taken along the line 2-2 in Fig. 1;

Fig. 2B shows an enlarged cross-sectional view taken along the line 3-3 in Fig. 1;

Fig. 3 shows an exploded perspective view of the hair clip shown in Fig. 1;

Fig. 4A shows a side cross-sectional view of the hair clip shown in Fig. 1 in a closed state;

Fig. 4B shows a side cross-sectional view of the hair clip shown in Fig. 1 in an opened state;

Fig. 5 shows a perspective view of a conventional hair clip in an opened state; and

Fig. 6 shows an enlarged cross-sectional view taken along the line 5-5 in Fig. 5.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiments of the hair clip according to the present invention will now be described in detailed with reference to the accompanying drawings.

As shown in Figs. 1-4, the hair clip includes a pair of elongated first and second hair retainers 1 and 2, a pivotal shaft 5 and a coil spring 6.

Each hair retainer 1 and 2 is an elongated narrow plate-like member having a lever portion 1b and 2b at its longitudinal one end portion (hereinafter referred to as "first end portion"). The first and second hair retainers 1

and 2 are pivoted at the first end portion 1b and 2b and urged by the coil spring 6 so that the other end portions (hereinafter referred to as "second end portions") 1a and 2a of the hair retainers 1 and 2 are closed.

The first hair retainer 1, which will be disposed outside when the hair clip A is attached to the user's head, is a semi-rigid plastic molded article. However, the material of the first hair retainer 1 is not limited to the above, and may be made of various materials.

The first hair retainer 1 is provided with a pair of opposing outside hinge ledges 3 and 3 downwardly extending from both lateral side edges of the first end portion 1b of the hair retainer 1. Each of the pair of outside hinge ledges 3 and 3 has a shaft-receiving aperture 3a and 3a.

On the other hand, the other hair retainer 2, which will be disposed inside when the hair clip is attached to the user's head (hereinafter referred to as "second hair retainer"), is an elongated plate-like metal press molded member. The plate-like member is preferably made of aluminum alloy which has enhanced corrosion resistance and is light in weight. However, the material of the hair retainer 2 is not limited to the above, and may be made of various materials including synthetic resin. The second hair retainer 2 is provided with a pair of opposing inside hinge ledges 4 and 4 upwardly extending from both lateral side edges of the first end portion 2b of the second hair retainer 2. Each of the

inside hinge ledges 4 and 4 has a shaft-receiving aperture 4a and 4a.

As best shown in Fig. 2B, the outside hinge ledges 3 and 3 of the first hair retainer 1 are disposed adjacent to and outside of the inside hinge ledges 4 and 4 of the second hair retainer 2. The end portions of the pivotal shaft 5 are fitted in the corresponding shaft-receiving apertures 3a and 4a, whereby the hair retainers 1 and 2 are pivoted, i.e., opened and closed, about the pivotal shaft 5.

As shown in Fig. 2A and 2B, the coil spring 6 is wounded around the pivotal shaft 5. The extended end portions of the coil spring 6 are fitted on the opposing inner surfaces of the lever portions 1b and 2b of the hair retainers 1 and 2. The coil spring 6 urges the second end portions 1a and 2a of the first and second hair retainers 1 and 2 in a closing direction. The coil spring 6 may be substituted by any other known member for urging the hair retainers 1 and 2 in a closing direction.

The corresponding hinge ledges 3 and 4 of the first and second hair retainers 1 and 2 are disposed side by side and fitted each other. However, in actual, the adjacent hinge ledges 3 and 4 are not tightly fitted each other so that the hair retainers 1 and 2 can be rotated without causing excessive friction. Thus, a gap is usually formed therebetween. As a result, in an actual use of the hair clip, there may be a possibility that hair is introduced into the

gap and caught therein. In the state in which hair is caught by the adjacent hinge ledges 3 and 4, when the hair clip A is detached from the user's head, the hair may be pulled out of the user's head. Therefore, in this embodiment, in order to prevent hair from being introduced into the gaps, a hinge ledge cover 7 is integrally provided to the first hair retainer 1. This hinge ledge cover 7 integrally extends from the lower surface of the first hair retainer 1 so as to connect the inner edge portions of the outside hinge ledges 3 and 3 of the first hair retainer 1. In this specification, the inner edge portion of the outside hinge ledge 3 means an edge portion located at the second end portion side 1a of the first hair retainer 1 (i.e., the left side edge portion of the outside hinge ledge 3 in Figs. 1, 3 and 4). Thus, in the assembled state (see Fig. 1), this hinge ledge cover 7 covers the inner edge portions of the inside hinge ledges 4 and 4 of the second hair retainer 2. In this specification, the inner edge portion of the inside hinge ledge 4 means an edge portion located at the second end portion side 2a of the second hair retainer 2 (i.e., the left side edge portion of the inside hinge ledge 4 in Figs. 1, 3 and 4).

Each inside hinge ledge 4 is provided with a hinge ledge cover introducing slot 4b at the lower portion of the inner edge portion thereof so that the hinge ledge cover 7 can be introduced therein when the first and second hair retainers 1 and 2 are opened and closed.

As is apparent from the above, by providing the aforementioned hinge ledge cover 7, hair is prevented from being introduced into not only the gap formed between the adjacent inside and outside hinge ledges 3 and 4 but also the space formed between the inside ledges 4 and 4.

Furthermore, in this embodiment, in order to assuredly prevent hair from being introduced into the aforementioned gap and space regardless of the opening angle of the pair of hair retainers 1 and 2, the following structure is employed.

As shown in Figs. 4A and 4B, a hinge ledge cover introducing slot 4b is formed at the basal end portion of each of the inside hinge ledges 4 and 4 of the second hair retainer 2. This slot 4b extends from the basal end portion of the inner edge portion beyond a region beneath the shaft-receiving aperture 4a. Thus, as shown in Fig. 4A, in the state in which the pair of hair retainers 1 and 2 are closed, the tip end (i.e., right hand end in Fig. 4A) of the hinge ledge cover 7 is introduced into the slot 4b beyond the region beneath the shaft-receiving aperture 4a. On the other hand, as shown in Fig. 4B, in the state in which the pair of hair retainers 1 and 2 are opened, the tip end of the hinge ledge cover 7 still located in the slot 4b, and therefore the hinge ledge cover 7 covers the inner edge portions of the inside hinge ledges 4 and 4 of the second hair retainer 2 so as to conceal the space between the inside hinge ledges 4 and 4. Thus, the gaps each formed between the adjacent inside and outside hinge ledges 3

and 4 and the space formed between the inside hinge ledges 4 and 4 are always covered by the hinge ledge cover 7 regardless of the opening angle of the pair of hair retainers 1 and 2. Therefore, hair is assuredly prevented from being introduced into the aforementioned gap and/or space.

In the meantime, the pivotal shaft 5 has originally an enlarged head portion 5a at its one end so that the shaft 5 can be inserted into the shaft receiving apertures 3a and 4a of the hinge ledges 3 and 4 from one side thereof. After the insertion of the pivotal shaft 5 into the shaft-receiving apertures 3a and 4a, the other end of the pivotal shaft 5 is deformed to have an enlarged head 5b (see Fig. 2B) so as not to be pulled out therefrom. Thus, the pivotal shaft 5 has enlarged head portions 5a and 5b at both ends. However, there may be a gap between the enlarged head portion 5a and 5b and the outer surface of the outside hinge ledge 3. Thus, in an actual use of the hair clip A, there may be a possibility that hair is caught by and between the enlarged head portion 5a and 5b and the outside hinge ledge 3. In the state in which hair is caught by and between the enlarged head portion 5a and 5b and the outside hinge ledges 3 and 3, when the hair clip is detached from the user's head, the hair may be pulled out of the user's head. In this embodiment, in order to prevent hair from being introduced into the gap, a cylindrical portion 8 for covering the enlarged head portion 5a and 5b is integrally formed on the outside surface of each of the outside hinge

ledges 3 and 3 of the first hair retainer 1. Thus, hair is prevented from being inserted into the gap formed between the enlarged head portion 5a and 5b and the outside hinge ledges 3 and 3 because the enlarged head portion 5a and 5b is covered by the cylindrical portion 8.

In the aforementioned embodiment, although each hair retainer 1 and 2 is an elongated plate-shaped member, the present invention is not limited to it. The hair retainer may be of any shape so long as a pair of hair retainers are pivoted by hinge ledges.

According to the present invention, since the first hair retainer is provided with a hinge ledge cover connecting inner side edge portions of the outside hinge ledges of the first hair retainer located at the second end portion side thereof and covering inner side edge portions of the inside hinge ledges of the second hair retainer, the gap between the adjacent inside and outside hinge ledges and the space between the inside hinge ledges are covered by the hinge ledge cover. Accordingly, hair is prevented from being introduced into the gap and/or the space, and therefore it is prevented that hair is caught by the hair clip and pulled out of a user's head when detaching the hair clip from the user's head. Thus, the hair clip does not make the user uncomfortable. Furthermore, since the hinge ledge cover is provided along the inner side edge portions of the outside hinge ledges, the outside hinge ledges are strengthened, resulting in enhanced durability.

In cases where the hinge ledge cover introducing slot extends to a region below the pivotal shaft, whereby a tip end of the hinge ledge cover is positioned below the pivotal shaft in the hinge ledge cover introducing slot when the pair of hear retainers are in a closed position, the hair retainers can be closed assuredly, and the hinge ledge cover can assuredly cover the inside hinge ledges even in a state in which the hair retainers are in an opened state.

It cases where the hinge ledge cover and the outside hinge ledges of the first hair retainer cover the inside hinge ledges of the second hair retainer irrespective of the opening angle of the hair retainers, since the inside hinge ledges are almost covered by the hinge ledge cover from the closed state to the opened state of the hair retainers, it is prevented that hair is caught by the hair clip at the time of opening and/or closing hair retainers.

In cases where the hinge ledge cover integrally extends from an inner surface of the first hair retainer, it is more assuredly prevented that hair is caught by the hair clip.

In cases where each of the outside hinge ledges of the first hair retainer is provided with an outwardly protruded cylindrical portion formed on an outer surface thereof and surrounding the shaft-receiving aperture thereof and that each of enlarged head portions of the pivotal shaft is disposed in the cylindrical portion, each of the enlarged head portions of the pivotal shaft is disposed in the cylindrical portion and

therefore the gap between the enlarged head portion and the outside hinge ledge can be covered by the cylindrical portion. Accordingly, it is prevented that hair is caught by the gap and pulled out of a user's head when detaching the hair clip from the user's head. Thus, the hair clip does not make the user uncomfortable. Furthermore, since the cylindrical portion is formed on the outside hinge portion, the outside hinge portion can be strengthened, resulting in enhanced durability.

In cases where the first hair retainer is an integral synthetic resin molded article, the first hair retainer can be easily colored or shaped as compared with a metallic hair retainer. Furthermore, in cases where the second hair retainer is made of metal, the first hair retainer can hide the metallic inside hinge ledges of the second hair retainer, thereby improving the appearance of the hair retainer. However, the first hair retainer can be made of metal such as aluminum, stainless or the like.

In cases where the spring is a coil spring wounded around pivotal shaft, the hair retainers can be assuredly urged in its closing position with simple structure.

In cases where the second hair retainer is a metal plate press molded article, the second hair retainer can be formed easily.

The hair clip according to the present invention can be preferably applied to a hair clip having elongated first and

second hair retainers and lever portions at the first and second end portions.

The terms and expressions which have been employed herein are used as terms of description and not of limitation, and there is no intent, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but it should be recognized that various modifications are possible within the scope of the invention claimed.